



## The Elan™ SC410 Microcontroller

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The ElanSC410 microcontroller is the second generation of PC/AT solutions from AMD targeted specifically for embedded systems. This single-chip solution combines the proven performance of an enhanced Am486® CPU microprocessor with the compatibility of a PC/AT chipset. The performance of the microprocessor is augmented by an 8K byte, write-back cache.

The goal of the ElanSC410 microcontroller is to combine all of the common logic and I/O functionality associated with an AT computing system and integrate them into a single device. This has been accomplished by matching the CPU with AT logic (2x8259A PICs, 2x8237A DMA controllers, 8254 timer), a 16550 UART, an IrDA controller, an ISA and VL-bus, a real time clock (RTC), and an EPP parallel port.

AMD has leveraged the low-power advantages developed for the mobile market. Operating voltages are at 3.3 volts, and down to 2.7V, yet retain 5 volt tolerant I/O pads. The ElanSC410 is a fully static design and includes an advanced PMU. Orderable in both 33-MHz, 66-MHz and 100-MHz peak processor speeds, the product is available in the ultra-small 292-ball grid array (BGA) package.

## PRODUCT HIGHLIGHTS

### Enhanced Am486 CPU Core

- Robust and industry proven
- 8 Kbyte cache
- 33-, 66-, and 100-MHz versions
- Fully static design for long battery life
- Just-add-memory™ for a complete system

### Complete PC/AT Compatibility

- Complete memory controller supports 64-Mbyte EDO and FPM DRAM
- Complete ROM controller supports ROM and Flash
- PC/AT-compatible versions of 8254, 2x8259A, and 2x8237A
- 16 bit ISA bus controller
- CPU local bus access (VL-type)

### Integrated Peripherals for Embedded Applications

- 16C550-compatible UART
- EPP-compatible parallel port
- 146818A-compatible RTC
- Matrix scan keyboard controller
- IrDA infrared port

### Built-In Power Management

- Flexible operating speeds up to 100 MHz and down to 0 MHz (suspend)
- Multiple operating modes: hyper-speed, high speed, low speed, standby, suspend, and off
- Full control of system and internal peripheral clocks
- Supports self refresh and slow refresh DRAMs
- PLL technology for clock generation
- Activity detection and automatic power management
- APM 1.2 compliant



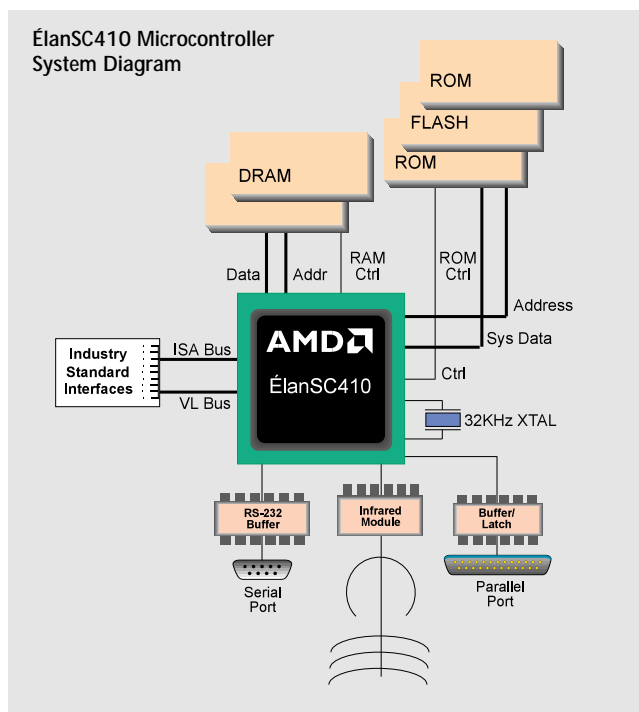
## ÉlanSC410 Microcontroller Benefits: ÉlanSC410 Microcontroller Features:

DOS and Windows compatibility	<ul style="list-style-type: none"> <li>Integrated PC/AT compatibility</li> <li>BIOS support provided by Phoenix Technologies and SystemSoft</li> </ul>
Lower system cost	<ul style="list-style-type: none"> <li>Single chip integration reduces system logic</li> <li>AMD E86 family provides price/performance that makes sense for embedded</li> </ul>
Accelerated time-to-market	<ul style="list-style-type: none"> <li>E86 CPU leverages the momentum of the successful x86 architecture</li> <li>FusionE86 program for software tools</li> <li>Single-chip design, Just-add-memory</li> <li>PC/AT compatibility reduces software development</li> </ul>
Longer life of supply	<ul style="list-style-type: none"> <li>AMD E86 family product life cycles match the needs of the embedded industry</li> </ul>
Ultra-small form factor	<ul style="list-style-type: none"> <li>It doesn't get any smaller than one chip</li> </ul>
Ultra-low power	<ul style="list-style-type: none"> <li>Unparalleled integration reduces chip count</li> <li>Low voltage</li> <li>Integrated Power Management Unit (PMU), allows fine tuning of power for maximum battery life</li> <li>Multistage Phase Lock Loops (PLL) generate all chip clocks from a 32 KHz watch crystal, enabling microamps of suspend current</li> </ul>
Built-in infrared support	<ul style="list-style-type: none"> <li>Integrated Infrared (IrDA) port supports both 1.15 Kbps and high-speed 1.15 Mbps (10x speed)</li> </ul>

The AMD FusionE86<sup>SM</sup> program provides ÉlanSC410 microcontroller and all E86 family customers with products to shorten time-to-market and ease design, supplying development tools for the entire design cycle. AMD's implementation of the FusionE86 program provides assistance to key third-party developers of RTOS, drivers, development tools and chips—ensuring that our embedded x86 customers will have access to critical development tools.

As a member of AMD's E86 family, the ÉlanSC410 microcontroller benefits from x86 momentum, yielding CPUs that preserve software investment and provide for significant time-to-market advantages due to the established x86 tool chain. AMD's E86 family of robust x86 embedded devices allows designers to leverage x86 success by providing a longer life of supply at price/performance points that make sense for embedded products.

The ÉlanSC410 microcontroller is available in 33-, 66-, and 100-MHz speeds in a 292-ball grid array (BGA) package. For additional information on the ÉlanSC410 microcontroller or any E86 family device, contact your local AMD sales office or AMD sales representative.



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